H·A



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,391	04/08/2004	Cheng T. Horng	HT03-016	8449

7590 07/08/2005

GEORGE O. SAILE
28 DAVIS AVENUE
POUGHKEEPSIE, NY 12603

EXAMINER	
TSAI, H JEY	

ART UNIT	PAPER NUMBER
2812	

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Notice of Allowability	Application No.	Applicant(s)	
	10/820,391	HORNG ET AL.	
	Examiner	Art Unit	
	H.Jey Tsai	2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *paper filed on 5/11/05*.

2. ☒ The allowed claim(s) is/are *14-26*.

3. ☒ The drawings filed on *08 April 2004* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

 * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

 Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 7/8/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *6/20/05* .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Examiner Amendment And Reasons For Allowance

Examiner Amendment

An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee.

This application is in condition for allowance except for the presence of non-elected claims 1-13. Accordingly, claims 1-13 are canceled.

The application has been amended as follows :

In the claims:

Cancel claims 1-13.

In claim 14, line 4, before "forming" insert – a formation process of --.

In claim 17, line 1, before "antiferromagnetic pinning layer" insert -- AFM --.

In claim 17, line 1 change "antiferromagnetic pinning layer" to – (antiferromagnetic pinning layer) --.

In claim 22, line 2, change "second" to – upper --.

In claim 23, line 2, change "second" to – upper --.

In claim 25, line 1, before "free" delete "ferromagnetic".

In claim 26, line 1, before "free" delete "ferromagnetic".

In the specification:

In page 1, lines 6-10 of the specification, replace the entire paragraph under the "RELATED PATENT APPLICATION", to:

-- This application is related to Docket No. HT 02-019, Serial No. 10/371,841, filing date is Feb. 10, 2003, patent number is 6,703,654, Docket No. HT 02-032, Serial No. 10/768,917, filing date is Jan. 30, 2004, Docket No. HT 03-006 Serial No. 10/661,038, filing date is Sept. 12, 2003, Docket No. HT 03-022, Serial No. 10/844,171, filing date is May 12, 2004 and Docket No. HT 03-025, Serial No. 10/849,310, filing date is May 19, 2004, assigned to the same assignee as the current invention. --.

Authorization for this Examiner's Amendment was given in a telephone interview with Mr. S. Ackerman on June 20, 2005.

Reasons For Allowance

The following is an Examiner's statement of reasons for the indication of allowable subject matter:

The basis for the allowability is :

Prior art of record does not teach forming, a tunneling barrier layer on the oxygen surfactant layer, the formation further comprising: forming, in the high vacuum deposition system, a layer of Al on the oxygen surfactant layer, the deposition first causing the adsorption of substantially all oxygen atom from the surfactant layer into the Al layer to form an amorphous layer of stoichiometric Al2O3 and, upon the depletion of all the oxygen in the surfactant layer, the remainder of the deposition forming a flat and smooth Al layer of small and uniform grain size; then oxidizing the flat and smooth Al layer in a plasma oxidation chamber by a process of radical oxidation, the process forming from the flat and smooth Al layer an oxidized layer of stoichiometric A12O3, the oxidized layer extending to the amorphous layer of stoichiometric Al2O3 formed during the Al deposition, to form, thereby, a tunneling barrier layer of substantially homogeneous AlaO3 stoichiometry.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 C.F.R. § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be

accompanied by a diligently-filed petition under 37 C.F.R. § 1.48(b) and by the fee required under 37 C.F.R. § 1.17(h).

Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably **accompany** the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Any inquiry of a general nature or clerical matters or relating to the status of this application or proceeding should be directed to the customer service whose telephone number is (703) 308-4357.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. Jey Tsai whose telephone number is (571) 272-1684. The examiner can normally be reached on from 7:00 Am to 4:00 Pm., Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873.

The fax phone number for this Group is (703) 872-9306.

hjt

6/21/2005



H. Jey Tsai
Primary Examiner
Patent Examining Group 2800